embodiment.

Fig. 63A and Fig. 63B are views showing hair areas and skin areas used for detecting a face direction according to the embodiment.

Fig. 64A and Fig. 64B are views showing the centers of gravity of the hair areas and of the skin areas according to the embodiment.

Fig. 65 is a view showing an example relationship between a difference and an angle during face-direction detection according to the embodiment.

Fig. 66 is an outlined internal view of a specific monitor device, viewed from a side thereof, according to the embodiment.

Fig. 67 is an outlined elevation of the specific monitor device according to the embodiment.

Fig. 68 is a block diagram of an actual structure implementing a signal processing device and a seating-order determination device in each teleconference device in the teleconference system according to the embodiment.

Fig. 69 is a view showing an outlined structure of another teleconference device which displays conference participants on a screen and disposes sound images by speakers according to the embodiment.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A teleconference system according to an embodiment of the present invention will be described below in the following order.

1. Structure of communication system

2. Structure of teleconference device

3. Structure of seating-order determination device

4. Grouping processing in the seating-order determination device

5. Seating-order determination operation through grouping in the seating-order determination device

6. Seating-order changing processing performed according to seating-order information in a teleconference device

7. First example of grouping processing which uses a statistical relationship in the seating-order determination device

8. Second example of grouping process which uses a statistical relationship in the seating-order determination device

9. Seating-order determination operation not through grouping in the seating-order determination device

10. Attention-degree-information generating operation in a teleconference device

11. Structure of monitor device

12. Example structure of each device

1. Structure of communication system

Fig. 1 shows an outlined structure of a teleconference system according to an embodiment of the present invention. In the present specification, a system refers to the whole structure formed of a plurality of devices and sections.

In the teleconference system shown in Fig. 1, teleconference devices TCD1 to TCDn are assigned to conference participants HM1 to HMn located at a plurality of (one to n) positions. The teleconference devices TCD1 to TCDn are connected through a communication network NT formed, for example, of an integrated services digital network (ISDN).

When the conference participants HM1 to HMn do not need to be distinguished from each other, they are hereinafter collectively called conference participants HM. In the same way, when the teleconference devices TCD1 to TCDn do not need to be distinguished from each other, they are hereinafter collectively called teleconference devices TCD. In Fig. 1, an IDSN is taken as an example of the communication network NT. Instead of an ISDN, other transfer media, such as cable television networks, the Internet, and digital satellite communication, can be used.

Each teleconference device TCD captures the image data and audio data of the corresponding conference participant